

REMARKS

Claims 1-22 were rejected by the office action. Claims 1 and 3-39 remain pending in the application. Claim 2 has been cancelled. New claims 23-39 have been added. Assignee traverses the instant claim rejections.

Examiner's Interview

Assignee's representatives would like to thank examiner Meng Yao Zhe for the courtesies extended to assignee's representatives (Michael Carney, Timothy Wilson, John Biernacki, and Matthew Johnson) during the telephone interview on January 30, 2008. The interview included a discussion of the rejection of claim 1 under 35 U.S.C. § 103(a) and the cited references. In the interview, it was respectfully submitted that neither the Armstrong reference nor the other cited references disclose the two different locks recited in claim 1. Additionally, the claim rejections under 35 U.S.C. § 112 were discussed during the interview. The remarks and the amendments contained herein further summarize the interview.

Claim Rejections Under 35 U.S.C. § 112 ¶2

On page 2 of the office action, claims 1-22 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite. Assignee has amended the claims for the purpose of clarification as follows:

i) Claim 1 - To further clarify what is meant by service agents operating synchronously with respect to each other, claim 1 has been amended to state that the threads requesting services are preemptively scheduled entities whereas the service agents are cooperatively scheduled entities. This amendment is supported by paragraph

[0018] of the specification. Amended claim 1 further describes a preemptively scheduled entity by reciting that the threads requesting services are preemptively schedule entities because processing of the threads requesting services can be temporarily interrupted. *See* The Authoritative Dictionary of IEEE Standard Terms, Institute of Electrical and Electronics Engineers, Inc., 2000, p. 859 (“preempted thread”). It is respectfully submitted that this amendment makes clear what was meant by service agents operating synchronously with respect to each other and what a service agent is. Similar amendments have been made to claim 22.

ii) Claim 5 - The dispatch module operating in the requesting thread’s context is discussed in paragraph [0044] of the application. It is respectfully submitted that reading claim 5 in light of this portion of the specification resolves any clarity issues.

iii) Claim 12 – The first lock not involving the requesting thread awaiting completion of a service agent that is handling the request of the thread is shown, for example, by the scenario in Figure 10, reproduced below for convenience and described in paragraph [0035]. It is respectfully submitted that reading claim 12 in light of this portion of the specification and Figure 10 resolves any clarity issues.

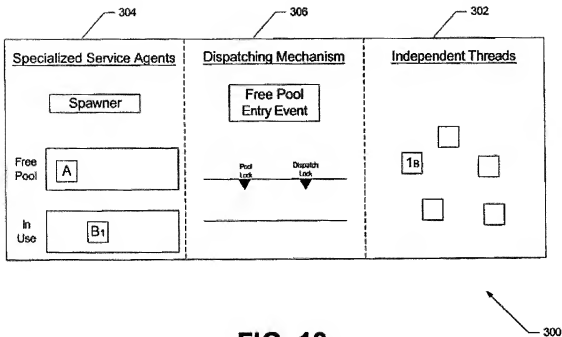


FIG. 10

iv) Claim 13 – Claim 13 has been amended to clarify the meaning of synchronous. This amendment is supported by at least paragraph [0018] of the specification. It is respectfully submitted that this amendment sufficiently clarifies the claim language.

v) Claim 14 – A single-threaded environment is discussed in detail in paragraph [0018] of the specification. It is respectfully submitted that reading claim 14 in light of this portion of the specification resolves any clarity issues.

vi) Claim 15 - A cooperative multi-tasking environment is discussed in detail in paragraph [0018] of the specification. It is respectfully submitted that reading claim 15 in light of this portion of the specification resolves any clarity issues.

vii) Claim 16 – Task-based service agents and thread-based service agents are discussed in detail in paragraphs [0018]-[0019] of the specification. It is respectfully

submitted that reading claim 16 in light of this portion of the specification resolves any clarity issues.

viii) Claim 17 – A technological advance is discussed in paragraph [0002] of the specification. It is respectfully submitted that reading claim 17 in light of this portion of the specification resolves any clarity issues.

Amendments have been made to claims 11-13 and 16 for consistency with claims from which they depend.

Claim Rejections Under 35 U.S.C. § 103(a)

Claims 1-6, 11, 13-17, 19, and 21-22 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Armstrong et al., Patent No. 7,137,120 in view of “Static Analyses for Eliminating Unnecessary Synchronization from Java Programs,” Aldrich et al, 1999. Claims 1, 19, 21-22 are further rejected under 35 U.S.C. § 103(a) as being unpatentable over Armstrong in view of Martin, Patent No. 7,080,375. Claims 7-10, 12, 18, and 20 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Armstrong in view of Aldrich in further view of Feridun, Patent No. 5,898,832. In light of the current amendments, it is respectfully submitted that the Armstrong and Aldrich references fail to teach or suggest all of the elements of the claims.

Claim 1

With reference to claim 1, it is respectfully submitted that the combinations of Armstrong, Aldrich, and Martin fail to render claim 1 unpatentable for multiple reasons. First, none of the references teach or suggest the interaction of threads requesting services and service agents responding to those requests in a disparate computer environment as

required in claim 1. The amendment to claim 1 clarifies this interaction by noting that threads requesting services are preemptively scheduled entities and service agents servicing the requests are cooperatively scheduled entities. The threads requesting services are further described by saying that they are preemptively scheduled entities because processing of the threads requesting services can be temporarily interrupted. None of the references teach or suggest this disparate environment containing preemptively scheduled entities which request service from cooperatively scheduled entities. Because none of the cited references teach or suggest this claimed feature, it is respectfully requested that the rejection be withdrawn.

With further reference to claim 1, claim 1 has been amended to recite that the dispatch lock and the service pool lock are nested relative to each other such that the service pool lock is acquired while holding the dispatch lock in order to synchronize the service agent with the requesting thread. This amendment is supported at least by the example depicted in Figures 15 – 22 described in paragraphs [0036] – [0042] of the specification. None of the cited references teach or suggest, alone or in combination, the nesting of locks as recited claim 1. Therefore, it is respectfully requested that the instant rejection of claim 1 be withdrawn.

With further reference to claim 1, claim 1 also requires that the service agent handle the request of the requesting thread *after* the requesting thread releases the dispatch and service pool locks. None of the cited references utilized in the § 103 rejection of claim 1 (i.e., Armstrong, Aldrich, or Martin) teach or suggest, alone or in combination, a service agent that has been synchronized with a requesting thread within a set of nested locks handling the request *after* the release of the locks. For example, the

locks in Armstrong are used to prevent simultaneous accesses to resources. Thus the gate discussed in column 6, lines 26-47 of Armstrong remains in place while a resource is being accessed. The example on page 23 of Aldrich provides that the described nesting is an inefficient manner of implementing a lock scheme. Still further, there is no teaching or suggesting that a service agent which is synchronized with a requesting thread inside these closed monitors in Aldrich would handle the request *after* releasing the monitors as required by claim 1. The office action fails to address this limitation in the § 103 rejection based upon Armstrong and Martin. Because none of the references, alone or in combination, teach the claimed feature of releasing both locks before a service agent handles a request, it is respectfully requested that the rejection be withdrawn.

Claims 19 and 21

Independent claims 19 and 21 stand rejected under 35 U.S.C. § 103(a) based on Armstrong, Aldrich, and Martin for the same reasoning as was offered in the rejection of claim 1. Claims 19 and 21 both contain the feature discussed with reference to claim 1, namely that the service agent handles the request *after* the release of the dispatch and service pool locks. As discussed above, none of the references teach or suggest this claimed feature. Therefore, it is respectfully requested that the rejections of claims 19 and 21 under 35 U.S.C. § 103(a) be withdrawn.

Claim 22

Independent claim 22 also stands rejected under 35 U.S.C. § 103(a) based on Armstrong, Aldrich, and Martin for the same reasoning as was offered in the rejection of claim 1. Claim 22 requires multi-threaded code generating service requests handled by single-threaded legacy computer code. The office action fails to address this claimed feature in any of the rejections of claim 22. It is submitted that none of the references cited in the rejections of claim 22 teach or suggest this interaction between multi-threaded code and single-threaded legacy code. Because the cited references fail to teach or suggest this claimed feature, it is respectfully requested that the rejection of claim 22 be withdrawn.

New Claims And Dependent Claims

Claims 23-39 have been added. These added claims are method claims that have subject matter that is based upon claims 1 and 3-18. These claims find support in the same portions of the specification as claims 1 and 3-18.

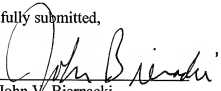
Assignee at this time has not submitted any arguments in support of the patentability of the dependent claims not mentioned above. It is believed that the independent claims are now in condition for allowance such that all of the dependent claims which depend either directly or indirectly therefrom are also in condition for allowance.

CONCLUSION

For the foregoing reasons, assignee respectfully submits that the pending claims are allowable. Therefore, the examiner is respectfully requested to pass this case to issue.

Respectfully submitted,

By: _____


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